Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) An X-ray tomograph comprising:

a radiation source and a radiation detector arranged opposite to each other, between which a bed with an examinee placed thereon is provided, said radiation source and radiation detector turning around said bed which ~~can be moved~~ is configured to move with respect to a go-around axis, radiation irradiated from said radiation source and passing through the examinee being detected using said radiation detector and being converted to projection data; and

reconfiguration means for creating a three-dimensional tomographic image in a region in concern of the ~~object~~ examinee from the ~~detected~~ projection data,

wherein said reconfiguration means determines, for each voxel, a projection data phase range as an angle between 180 and 360 degrees from projection data obtained at a spiral orbit scan so that a difference in absolute values of cone angles at both ends of the projection data phase range used is ~~reduced~~ minimized, superimposes a reconfiguration filter, assigns weights to data of [[the]] a same phase or opposite phase for each phase for the projection data phase range, and three-dimension back projects the filter-processed projection data over said projection data phase range determined for each voxel along [[the]] an irradiation trace of [[the]] a radiation beam.

Claim 2 (canceled).

3. (previously presented) The X-ray tomograph according to claim 1, wherein the projection data phase range used is determined so as to be the same phase range for each voxel.

Claim 4 (canceled).

5. (currently amended) The X-ray tomograph according to any one of claims ~~1, 3 and 4~~ 1 and 3, wherein projection data [[whose]] for a number of images taken per rotation that is a multiple of [[the]] a number of sides C of a rectangle or hexagon is acquired, and said reconfiguration means comprises back projection means for superimposing said reconfiguration filter on [[this]] the acquired projection data, grouping data at [[the]] a same channel position and having projection phases in [[the]] a go-around direction shifting by 2 Nπ/C (N=1, 2, 3, ...) radians at a time and performing back projection to a square image array group by group.

6. (currently amended) The X-ray tomograph according to any one of claims ~~1, 3 and 4~~ 1 and 3, wherein said reconfiguration means converts the projection data obtained to data including fan beam data and parallel beam data [[whose]] for a number of images taken per rotation that is a multiple of [[the]] a number of sides C of a rectangle or hexagon, superimposes the reconfiguration filter on ~~this projection~~ the converted data, groups data at [[the]] a same channel position and having projection phases in [[the]] a go-around direction shifting by 2Nπ/C (N=1, 2, 3, ...) radians at a time and performs back projection to a square image array group by group.

7. (currently amended) The X-ray tomograph according to claim 1, ~~wherein~~ further

comprising associating means ~~is provided~~ for associating ~~pixel intervals~~ voxel pitch in [[the]] a body axis direction with [[the]] a relative moving speed between the ~~object~~ examinee and said radiation source in [[the]] a go-around axis direction.

8. (currently amended) The X-ray tomograph according to claim 7, wherein said associating means is constructed so that [[the]] a relationship between ~~pixel interval~~ voxel pitch rpitch in the body axis direction of a square image and the relative moving speed in the go-around axis direction of the ~~object~~ examinee and said radiation source is expressed by 2·N·rpitch (N=1, 2, 3... ...).

9. (previously presented) The X-ray tomograph according to claim 8, wherein at the phase of Nπ (N=1, 2, 3, ...) radians of the radiation source, the position on the radiation detector at which the beam passing through a voxel I (x, y, Z) whose body axis direction position is Z millimeters intersects and the position on the radiation detector at which the beam passing through a voxel I (-x, -y, NJ/2+Z) whose body axis direction position is N·J/2+Z millimeters intersects are the same.

Claims 10-14 (canceled).